

PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A PERMANENT TRAFFIC SIGNAL AT THE MD 115 AND NEEDWOOD ROAD INTERSECTION. MD 115 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA THREE-PHASE, SEMI-TRAFFIC ACTUATED MODE, WITH THE MD 115 APPROACHES RUNNING CONCURRENTLY, AND THE NEEDWOOD ROAD APPROACH OPERATING AS A SEPARATE PHASE. EXCLUSIVE/PERMISSIVE LEFT TURN PHASING WILL BE PROVIDED FOR WESTBOUND MD 115.

CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT PHASE CONTROLLER WITH TWO (2) FOUR-CHANNEL RACK MOUNT LOOP DETECTOR AMPLIFIERS, AND L.A.U. PANEL WITH HARNESS HOUSED IN A BASE MOUNTED CABINET.

SPECIAL NOTES

A FOURTH APPROACH (SOUTHBOUND) WILL BE CONSTRUCTED AT A FUTURE DATE AND WILL BECOME PART OF THE SIGNALIZED INTERSECTION.

MAINTENANCE OF TRAFFIC

THE FOLLOWING WORK ZONE TRAFFIC CONTROL STANDARDS SHALL BE USED FOR THE PROJECT.

STANDARD NO. MD-105.00 STANDARD NO. MD-105.105 (SHOULDER WORK)
STANDARD NO. MD-105.01 STANDARD NO. MD-105.107 (LANE SHIFT)
STANDARD NO. MD-105.02 STANDARD NO. MD-105.109 (LANE SHIFT)
STANDARD NO. MD-105.101 (FLAGGING OPERATION)
STANDARD NO. MD-105.103 (INT. FLAGGING OPERATION)

NOTE: STANDARDS TO BE MODIFIED, BY REPLACING W21-5 SIGN WITH A W29-1 SIGN (ROAD WORK AHEAD)

PROJECT CONTACTS

THE CONTACT PERSONS FOR DISTRICT #3 ARE AS FOLLOWS:

MR. CHARLIE WATKINS
DISTRICT ENGINEER
PHONE: 301-513-7311

MR. RICHARD L. DAFF, SR.
CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: 301-787-7630

MR. MAJID SHAKIB
ACTING ASSISTANT DISTRICT
ENGINEER - TRAFFIC
PHONE: 301-513-7358

MR. JOE GECKLE
UTILITY ENGINEER
PHONE: 301-513-7350

THE POWER COMPANY REPRESENTATIVE IS:

MS. ROBIN LAW
POTOMAC ELECTRIC AND POWER
PHONE: 301-670-8740

THE BELL ATLANTIC REPRESENTATIVE IS:

MR. BOB EDER
PHONE: 410-393-6096

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE STATE HIGHWAY ADMINISTRATION:

SECTION	QUANTITY	DESCRIPTION
9014	1 EACH	12 IN., ONE-WAY, THREE-SECTION (R.Y.G.) TRAFFIC SIGNAL HEAD - MAST ARM MOUNT
9084	1 EACH	EIGHT PHASE, (FULL-TRAFFIC-ACTUATED) CONTROLLER WITH L.A.U. PANEL WITH HARNESS HOUSED IN A NEMA SIZE "6" CABINET - BASE MOUNT CABINET.
9089	87 S.F.	SHEET ALUMINUM SIGNS
	1 EACH	M1-5 SIGN "MD 115" (24 IN. X 30 IN.) POLE MOUNT
	1 EACH	M3-2 "EAST" (24 IN. X 12 IN.) POLE MOUNT
	1 EACH	M6-1 "ARROW" (21 IN. X 15 IN.) POLE MOUNT
	1 EACH	ONE PIECE SHIELD ASSEMBLY ON A BLACK BACKGROUND (48 IN. X 75 IN.) POLE MOUNT: M3-4 SIGN (30 IN. X 15 IN.) "WEST" M1-5 SIGN (48 IN. X 36 IN.) "MARYLAND 115" M6-1 SIGN (30 IN. X 24 IN.) "DIRECTIONAL ARROW - HORIZONTAL POLE MOUNT

EQUIPMENT LIST "B"

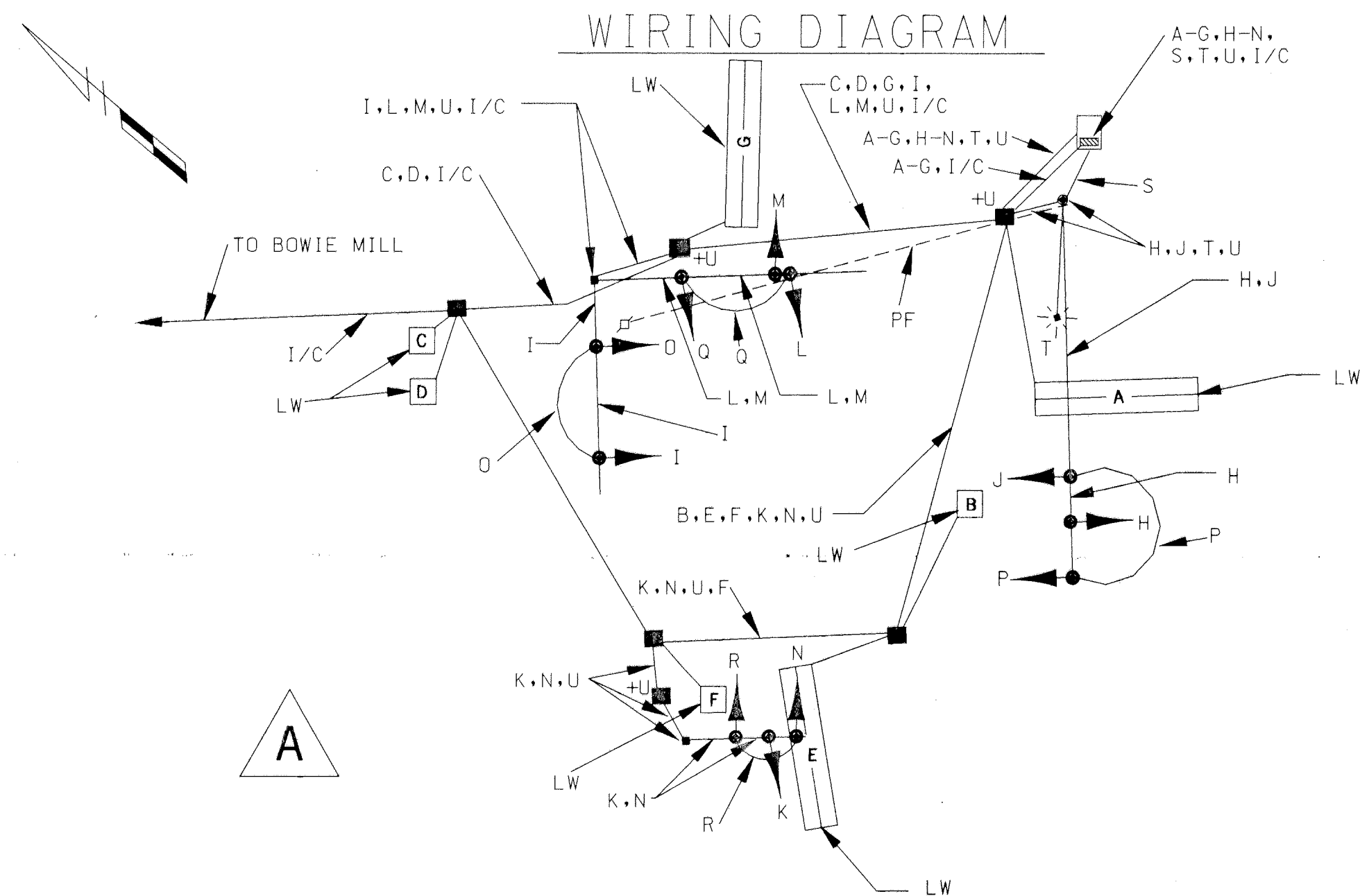
B. EQUIPMENT TO BE SUPPLIED AND/OR INSTALLED BY THE CONTRACTOR:

SECTION	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC
2001	1 C.Y.	TEST PIT EXCAVATION
5004	30 L.F.	24 INCH WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
8001	5 C.Y.	FURNISH & INSTALL CONCRETE FOR SIGNAL FOUNDATION
8006	1 EACH	CUT, CLEAN AND CAP MAST ARM
8011	4 EACH	INSTALL SIGNAL HEAD - ANY TYPE
8020	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT
8021	110 L.F.	FURNISH AND INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR)
8023	10 L.F.	FURNISH & INSTALL 1 IN. LIQUID TIGHT FLEXIBLE NON-METALLIC ELECTRICAL CONDUIT FOR DETECTOR SLEEVE
8024	10 L.F.	FURNISH AND INSTALL 2 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8027	50 L.F.	FURNISH AND INSTALL 3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8030	30 L.F.	FURNISH AND INSTALL 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8033	1 EACH	FURNISH AND INSTALL HANDHOLE
8034	1 EACH	FURNISH & INSTALL GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH
8039	800 L.F.	FURNISH AND INSTALL 12 PAIR COMMUNICATION CABLE, JELLYFILLED (UNDERGROUND)
8040	450 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)
8041	80 L.F.	FURNISH & INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
8044	25 L.F.	FURNISH & INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8045	650 L.F.	FURNISH & INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8049	40 L.F.	FURNISH AND INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8050	30 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG - THHN/THWN
8054	57 S.F.	INSTALL OVERHEAD SIGN
8081	1 EACH	FURNISH & INSTALL MAST ARM POLE WITH 38 FT. MAST ARM CUT TO 28' IN LENGTH

PHASE CHART

	1	2	3	4	5	6	7	7a	7b	7c	7d
PHASE 2 + 5	G	G	G	R	R	R	R	R	R	R	R
2 + 5 CHANGE	G	G	G	R	R	R	R	R	R	R	R
PHASE 2 + 6	G	G	G	G	G	R	R	R	R	R	R
2 + 6 CHANGE	Y	Y	Y	Y	Y	R	R	R	R	R	R
PHASE 4	R	R	R	R	R	G	G	G	G	G	G
4 CHANGE	R	R	R	R	R	Y	Y	Y	Y	Y	Y
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R

WIRING DIAGRAM



A-G	2-CONDUCTOR ELECTRICAL CABLE (ALUMINUM SHIELDED)	T	2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
H-N	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)	U	STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
O-R	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)	I/C	12 PAIR JELLY-FILLED COMMUNICATION CABLE - UNDERGROUND (NO. 19 A.W.G.)
S	3 WIRE ELECTRICAL CABLE (NO. 4 A.W.G.)		

LW - LOOP WIRE (NO. 14 A.W.G.)
PF - PROPOSED OVERHEAD FEED
+ - 3/4 IN. X 10 FT. GROUND ROD

REVISIONS

APPROVALS

ASST. TRAFFIC ENGINEERING DESIGN DIVISION

ASST. DISTRICT ENGINEER, TRAFFIC

CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION

DIRECTOR, TRAFFIC & SAFETY



MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION

MD 115 @ NEEDWOOD ROAD
GENERAL INFORMATION

DRAWN BY: CJ
CHECKED BY:
SCALE: NOT TO SCALE
DATE: 6/99

F.A.P. NO. AC-STPG-0005(588)E
S.H.A. NO. AW517A/B/MST
COUNTY: MONTGOMERY
LOG MILE: 15011502.84

TS NO. 3820-GIA
T.I.M.S. NO. C-982

SHEET NO. 2 OF 3